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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/976,930	10/11/2001	Clifford L. Hersh	PA1950US	2048
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			EXAMINER	
			BULLOCK JR, LEWIS ALEXANDER	
		ART UNIT		PAPER NUMBER
		2195		

DATE MAILED: 07/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/976,930

Applicant(s)

HERSH, CLIFFORD L.

Examiner

Lewis A. Bullock, Jr.

Art Unit

2195

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30, 32, 33 and 36-48 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 13-20 and 48 is/are allowed.
- 6) ☒ Claim(s) 1-7, 10-12, 21-30, 32, 33 and 36-47 is/are rejected.
- 7) ☒ Claim(s) 8 and 9 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
- Paper No(s)/Mail Date _____.

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-5, 7, 11, 12, 21-25, 28-30, 32, 33, 36, 39-45 and 47 are rejected under 35 U.S.C. 102(e) as being anticipated by KHANNA (U.S. Patent 6,868,414).

As to claim 1, KHANNA teaches a method for executing an operation upon a linked data structure (tree) having at least one element, the method comprising the steps of: performing a first set of operation tasks in a first phase, the first set of operation tasks operable to effect a first set of element state transitions (via traversing the tree to find the point of insertion / deletion / update); developing a second set of operation tasks, the second set of operation tasks operable to effect a second set of element state transitions and being associated with a set of pointers to the linked data structure, the set of pointers being stored external to the linked data structure (via storing a queue element of pointers to the point of updation from the previous traversal such that the updations are serialized), the second set of element state transitions being distinct from the first set of state transitions; and performing the second set of operation

tasks in a second phase using the set of pointers (via performing the update) (see abstract; col. 6, lines 63-67; col. 7, lines 4-23; col. 7, lines 44-63; col. 8, lines 29-57; col. 10, line 39 – col. 11, line 6; col. 11, lines 32-55).

As to claim 2, KHANNA teaches the first set of operation tasks includes navigating existing data structure links (traversal) (see abstract; col. 6, lines 63-67; col. 7, lines 4-23; col. 7, lines 44-63; col. 8, lines 29-57; col. 10, line 39 – col. 11, line 6; col. 11, lines 32-55).

As to claim 3, KHANNA teaches developing the set of pointers to the data structure (via queuing the entries of the pointers for updating) (see abstract; col. 6, lines 63-67; col. 7, lines 4-23; col. 7, lines 44-63; col. 8, lines 29-57; col. 10, line 39 – col. 11, line 6; col. 11, lines 32-55).

As to claim 4, KHANNA teaches the first phase comprises performing parallel operations on the linked data structure and the second phase comprises performing serial operations on the linked data structure (via traversal the linked list between concurrent processes and serially updating the list) (in particular col. 4, lines 65 – col. 5, line 3; see also abstract; col. 6, lines 63-67; col. 7, lines 4-23; col. 7, lines 44-63; col. 8, lines 29-57; col. 10, line 39 – col. 11, line 6; col. 11, lines 32-55).

As to claim 5, KHANNA teaches the set of pointers is stored in a list (queue) (see abstract; col. 6, lines 63-67; col. 7, lines 4-23; col. 7, lines 44-63; col. 8, lines 29-57; col. 10, line 39 – col. 11, line 6; col. 11, lines 32-55).

As to claim 7, KHANNA performing conflicts check for the operation (col. 7, lines 25-64).

As to claim 11, refer to claim 1 for rejection. KHANNA further details receiving and queuing operation tasks in a task queue (via queuing transaction update entries) (see abstract; col. 6, lines 63-67; col. 7, lines 4-23; col. 7, lines 44-63; col. 8, lines 29-57; col. 10, line 39 – col. 11, line 6; col. 11, lines 32-55).

As to claim 21, refer to claim 1 for rejection. KHANNA further details grouping the first plurality of operation tasks and grouping the second plurality of operations tasks (via traversal being performing independent of the updating and the updating operations are stored in a queue for processing) (see abstract; col. 6, lines 63-67; col. 7, lines 4-23; col. 7, lines 44-63; col. 8, lines 29-57; col. 10, line 39 – col. 11, line 6; col. 11, lines 32-55).

As to claim 22, refer to claim 1 for rejection.

As to claims 23-25, KHANNA teaches a method for executing a plurality of operations upon a linked data structure having at least one element, the method comprising the steps of: dividing each of the plurality of operations into first and second distinct sets of operation tasks (via performing traversals concurrently and updations serially); performing the first set of operation tasks of the plurality of operations together in a first phase(wherein the traversals of the list occur concurrently); and performing the second set of operation tasks of the plurality of operations together in a second phase (via storing the updations in a queue to be performed serially) (see abstract; col. 6, lines 63-67; col. 7, lines 4-23; col. 7, lines 44-63; col. 8, lines 29-57; col. 10, line 39 – col. 11, line 6; col. 11, lines 32-55).

As to claim 28, reference is made to a system that corresponds to the method of claim 1 and is therefore met by the rejection of claim 1 above.

As to claim 29, refer to claim 28 for rejection.

As to claim 30, reference is made to a computer readable medium that corresponds to the method of claim 1 and is therefore met by the rejection of claim 1 above.

As to claim 32, refer to claim 28 for rejection.

As to claims 33, refer to claim 28 for rejection.

As to claims 36, 39 and 40, refer to claims 1 and 2 for rejection.

As to claims 41-45, refer to claims 1, 2 and 4 for rejection.

As to claims 47 and 12, refer to claim 1 and 4 for rejection.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 6, 10, 26, 27, 37, 38 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over KHANNA (U.S. Patent 6,868,414).

As to claim 6, KHANNA substantially discloses the invention. However, KHANNA does not explicitly state that the list is a first in last out list. Official Notice is taken in that it is well known in the art that a queue operates in first in last out and therefore would be obvious to one of ordinary skill in the art that the queue of KHANNA would perform as such.

As to claims 26 and 27, KHANNA teaches performing the traversals concurrently and the updating is performed by queuing the pointers for the update and serially

performing the queued operations. It would be obvious to one of ordinary skill in the art that the traversals are visible only to the process performing the traversal since they are performed concurrently and that the updations are visible to all operations since it changes the list for traversal.

As to claim 46, refer to claim 30 for rejection. However, claim 46 further details inserting and deleting operations. It is well known in the art that updating operations include both inserting and deleting operations and therefore when used in the context of KHANNA would insert or delete elements to the tree.

As to claim 10, refer to claim 1 for rejection. However, claim 46 further details inserting and deleting operations. It is well known in the art that updating operations include both inserting and deleting operations and therefore when used in the context of KHANNA would insert or delete elements to the tree.

As to claims 37 and 38, refer to claim 10 above for rejection.

Allowable Subject Matter

5. Claims 13-20 and 48 are allowed.
6. Claims 8 and 9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

7. Applicant's arguments with respect to claims 1-7, 10-12, 21-30, 32, 33 and 36-47 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lewis A. Bullock, Jr. whose telephone number is (571) 272-3759. The examiner can normally be reached on Monday-Friday, 8:30 a.m. - 5:00 p.m..

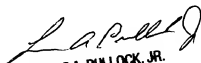
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng An can be reached on (571) 272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic

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Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

July 10, 2006



LEWIS A. BULLOCK, JR.
PRIMARY EXAMINER